7. Manoj

Program Name: Manoj.java **Input File: manoj.dat**

Manoj has always been interested in temperature scales. Of course he has studied a lot about the Celsius and Fahrenheit scales. He believes it is time to create a Manoj Scale. Your job is to create the Manoj Scale given the proper information, then allow him to convert to and from the three scales.

Here is some vital information:
On the Celsius Scale, the freezing point of water is 0 degrees and boiling point of water is 100 degrees.
On the Fahrenheit Scale, the freezing point of water is 32 degrees and boiling point of water is 212 degrees.

Your program will read the freezing and boiling points of water on the Manoj Scale.

Using those two numbers on each scale, you should be able to convert from any scale to any of the others.

To make this challenge more intriguing, Manoj is only going to use integer inputs, and beyond that the data he provides will only create integer results. This is because Manoj loves mental math challenges involving integers.

For this problem, C means Celsius, F means Fahrenheit, and M means Manoj.

Input: The first line consists of a number N, representing the number of lines of data to follow. N will be in the range of [1,50]. The next N lines of data consist of three integers Num1, Num2, and Num3 followed by two characters Char1 and Char2. A single space separates each of the five items.

Num1 will be the freezing point of water on the Manoj Scale. It will be an integer in the range [-1000,1000].
Num2 will be the boiling point of water on the Manoj Scale. It will be an integer in the range [-1000,1000].
Note that Num2 > Num1.
Num3 will be the temperature on the Char1 that is being investigated. It will be an integer in the range [-1000,1000].
Char1 will be an uppercase C, F, or M indicating the scale from which we are converting.
Char2 will be an uppercase C, F, or M indicating the scale to which we are converting.
Note that Char1 and Char2 will not be equal to each other.

Output: Each output will be a statement following the formatting rules below.
<Temperature to convert> degrees <starting scale> = <Converted value> degrees <destination scale>
One space separates each item in the output.

Sample input:
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6
0 50 20 M C
100 190 145 M F
32 212 171 F M
30 70 77 F M
0 10 80 C M
10 20 95 C F
```

Sample output:
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20 degrees M = 40 degrees C
145 degrees M = 122 degrees F
171 degrees F = 171 degrees M
77 degrees F = 40 degrees M
80 degrees C = 8 degrees M
95 degrees C = 203 degrees F
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